

Catalogue of American Amphibians and Reptiles.

Nieto-Román, S. and M.H. Wake. 2012. *Siphonops hardyi*.

***Siphonops hardyi* Boulenger
Hardy's Caecilian**

Siphonops hardyi Boulenger 1888:189. Type-locality, "Porto Real, province of Rio de Janeiro, Brazil". Holotype, British Museum of Natural History (BMNH) 1947.2.13.87 (formerly 1887.12.29.39), age and sex undetermined, collected by M.F. Hardy du Dreneuf, date of collection unknown (not examined by authors).

• **CONTENT.** No subspecies have been described.

• **DEFINITION.** *Siphonops hardyi* is a small, slender species (total length [TL] to 178 mm). The species has a range of 89–101 primary folds (Maciel et al. 2009), and two nuchal collars with dorsal transverse grooves. Secondary folds and dermal scales are absent. The eyes, typically visible under the skin, are

situated in a socket. The tentacles lie between the eyes and nostrils, closer to the eyes. No splenial teeth. The end of the body is an unsegmented terminal shield; the vent interrupts the posterior body folds. The mode of reproduction is assumed to be oviparous because all of the species of *Siphonops* for which reproductive mode is known have that state. Coloration in life is uniform light pink (see Maciel et al. 2009). Color in ethanol-preserved specimens is a darker gray-brown or light brown.

• **DIAGNOSIS.** *Siphonops hardyi* is distinguished from *S. annulatus*, *S. paulensis*, and *S. leucoderus* in having a uniform body color; those species have the grooves marked with white or yellow. It is distinguished from *S. insulanus* by having a smaller maximum size and fewer primaries.

• **DESCRIPTIONS.** Boulenger (1888) described the species in a brief account of the type-specimen and a comment on its differences from *S. annulatus*. Ihering (1911) and Nieden (1913) also provided concise descriptions. Sawaya (1937) provided a comparison of 3 additional specimens with material from the Museu Paulista and previous descriptions. Dunn (1942) and Taylor (1968) presented more detailed descriptions and measurements.

• **ILLUSTRATIONS.** A color photograph of a living specimen is in Maciel et al. (2009). Taylor (1968) included a black-and-white photograph of a paratype and provided line drawings of three views of the head, a ventral view of the body terminus, and the upper and lower jaws. Boulenger (1895) provided black-and-white drawings of the lateral head and dorsal body. A line drawing of skin granulations appears in Sawaya (1937).

• **DISTRIBUTION.** The species occurs only in southeastern Brazil in the states of Sao Paulo, Rio de Janeiro and Espirito Santo (Araújo et al. 2009; HerpNet 2010; Rocha et al. 2004), and in Minas Gerais. Maciel et al. (2009) extended the distribution of *S. hardyi* to the northwest, with a specimen collected in the Atlantic rainforest in Minas Gerais; they discussed current information on the species' range. It ranges from near sea level to at least 800 m, perhaps higher. It can be found in soil, under rotten logs or under the forest leaf-litter, and has been found in a stream (see Zamprogno and Zamprogno 1998).

• **FOSSIL RECORD.** None.

• **PERTINENT LITERATURE.** The literature on the species is very limited, although some aspects of its morphology and systematics have been studied. Distribution is discussed in the IUCN Red List (Caramaschi et al. 2004), and by Duellman (1999), Dunn (1942), Maciel et al. (2009), Taylor (1968), von May (2009), and Zamprogno and Zamprogno (1997). The urogenital system was described by Wake (1968, 1970, 1972). Sawaya (1937) mentioned that the skin of *S. hardyi* is unusually "granular" compared



FIGURE 1. Adult male *Siphonops hardyi* (MZUFV 8748) from near Ferros, Minas Gerais, Brazil. Photo published in Maciel et al. (2009) and courtesy of Diego Santana.



MAP. Distribution of *Siphonops hardyi*. The circle marks the type-locality; other reported localities are indicated by black dots.

to other species in the genus. Data for the species were included in Renous and Gasc's (1989) discussion of body and vertebral proportions in caecilians. Osteology of the genus was described by Wake (2003), but *S. hardyi* was not included: it would share the general morphology of the genus. General aspects of neuroanatomy were described in Wake (1993). Predation of a specimen in a dammed part of a stream by a Maximilian's Snake-necked Turtle (*Hydromedusa maximiliani*) was reported by Zamprognio and Zamprognio (1998). Phylogenetic analyses that included the species are Boulenger (1895), Frost et al. (2006), San Mauro et al. (2006), Wollenberg and Measey (2009), and Zhang and Wake (2009). Systematic discussions that mentioned the species are Frost (2006), Lescure et al. (1986), Nussbaum and Wilkinson (1989), and Wilkinson and Nussbaum (2006). Lists and taxonomic keys that refer to the genus *Siphonops* and its included species are provided by Dunn (1942), Sawaya (1937), Smith and Smith (1972), and Taylor (1968). Partial sequences of mitochondrial genes 16S, H3, 28S, ND1 and cyt b are available in GenBank.

• **REMARKS.** Little is known of the natural history of *S. hardyi*. There are several reviews of the biology of the genus *Siphonops* in the literature, but most of them are based on *S. annulatus* and *S. paulensis*. As noted, the genus and its included species are in need of a complete review.

• **ETYMOLOGY.** The species is named for M.F. Hardy du Dreneuf, the collector of the type-specimen. It is also the basis for the common name.

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